National Weather Service
Raleigh, North Carolina

Changing Skies

Over Central North Carolina

Volume 2, Issue 1
Winter 2004

Keep Aware of the Dangers of Winter Weather

The National Weather Service and North Carolina Division of Emergency Management will declare the week of December 5th, 2004 as Winter Weather Awareness Week in North Carolina. Each day this week National Weather Service offices serving North Carolina will issue Public Information Statements discussing how winter weather impacts Eastern North Carolina. These statements will be broadcast over NOAA Weather Radio and will also be posted on the Internet.

North Carolina experiences a wide variety of winter weather every year. One of the most common and yet most dangerous winter weather threats we experience is ice. Significant accumulations of ice, in the forms of freezing rain and sleet, can bring down trees, power lines and telephone poles. Power and communications services can be disrupted for days, as many residents experienced during the ice storm of December 2002 when millions from the Triangle to the mountains lost power.

Even minor accumulations of ice can cause extreme hazards to motorists and pedestrians. During freezing conditions, the roadway may appear to be wet, however, what appears to be water can actually be ice. This phenomenon is known as "black ice" and is most common on bridges and overpasses. Black ice occurs when water on the road freezes into a sheet of ice, posing a threat to vehicles and pedestrians. For the latest road conditions and access to web cameras statewide, visit the Department of Transportation online at http://www.ncsmartlink.org.

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What Winter Weather Problem?

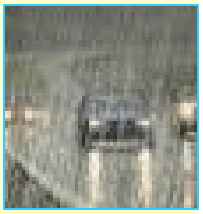
Residents new to central North Carolina often go into their first winter here wondering what all the fuss is about over snow, sleet, and ice. They usually do not understand the complexity of winter weather in North Carolina until they have experienced their first winter storm and have been without power for several hours. As the sleet turns into snow, then back to sleet before ending as freezing rain, the ground takes on the appearance of a skating rink rather than a soft blanket of snow. It is this hodge-podge mixture that forecasters contend with many times through the winter season.

Unlike many locations in the East where you can usually see winter weather moving into the area, most winter storms actually develop over central North Carolina. Many times, very tough decisions for Winter Storm Watches and Warnings have to be made well in advance of the development of the weather pattern which will cause the snow, sleet or

(Continued on page 5)

Inside this issue:

Don't drive yourself crazy! Heed these safe driving tips



Of the 28 deaths attributed to winter weather nationwide in 2003, 19 of them were traffic fatalities. Wintry conditions were also responsible for 112 injuries last year. How can you keep from becoming a statistic this winter? Here are some important safe driving tips, courtesy of the Federal Emergency Management Agency (FEMA):

- Before the wintry weather arrives, make sure your vehicle is ready for it. Have a mechanic check your battery, antifreeze, thermostat, flashing hazard lights, heater, brakes, and tires.
- Stock your trunk with some "just in case" items: a snow and ice scraper, blankets, extra hat and gloves, a cell phone, a flashlight with extra batteries, cat litter (for traction), bottled water, and a few "munchies" such as nuts or canned or dried fruit.
- Slow down. Your vehicle needs over three times the room to stop on snowy or icy roads compared to dry pavement.

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Spotlight On:

Darin Figurskey, new Meteorologist-in-Charge of NWS Raleigh

Darin Figurskey is the new Meteorologist-in-Charge (MIC) at the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) Forecast Office in Raleigh, North Carolina. Darin replaces Stephen Harned, who retired July 1 after 14 years at NWS Raleigh. The Raleigh office is one of 122 NWS Weather Forecast Offices (WFO) in the nation and one of 23 in the NWS Eastern Region. NOAA is part of the U.S. Department of Commerce.

As MIC, Darin is responsible for ensuring the citizens in central North Carolina receive timely and accurate weather warnings and forecasts as well as climate and water information. His responsibilities also include maintaining close working relationships with NWS partners in the public, private, and academic sectors, as well as providing severe weather awareness, preparedness and safety education for the public. A key role is interacting with state officials as the Raleigh office is the NWS state liaison office for North Carolina.

A native of southeast Michigan and a graduate of the University of Michigan, Darin's career began January 16, 1990 at the NWS office in Flint, Michigan. In September, 1991, Darin transferred to the NWS office in Detroit. He spent nearly two years as a forecaster in Lubbock, Texas, from November, 1993 to September, 1995, returning to Michigan as a senior forecaster at the Detroit/Pontiac forecast office. Darin became a Warning Coordination Meteorologist at the Detroit/Pontiac office in November, 1997. For the past three years, Darin was the MIC of the NWS office in Buffalo, New York.

Why did Darin choose North Carolina? Because it is a growing area, with very diverse weather challenges. The Raleigh office also has an excellent reputation, due in part to its collaborative research with NC State University. Darin received a great North Carolina welcome from Frances, Ivan, and Jeanne, three of the seven tropical cyclones to affect North Carolina this past hurricane season. On Darin's first day at the Raleigh office, September 8, the remnants of Hurricane Frances were giving the state areas of heavy rain and isolated tornadoes. This was followed by the remnants of Ivan and Jeanne in mid and late September. After Darin's first three weeks in Raleigh, he had already been through three tropical systems and two storm damage surveys!

Darin is looking forward to meeting NWS customers, learning the intricacies of central North Carolina weather in every season, and establishing some roots in the Raleigh area. Darin is grateful for the opportunity to work with a dedicated and knowledgeable staff committed to serving the people of North Carolina. Darin is married to Deanna, and they have three children, Anastasia, Sullivan, and Adelaide.

-By Darin Figurskey & Richard Jones

New NOAA Weather Radio station is now serving the Sandhills

The National Weather Service is proud to announce the addition of a new NOAA Weather Radio (NWR) transmitter located in Ellerbe, North Carolina just north of Rockingham. The new station, WNG-597, is operating on a frequency of 162.400 MHz and serves the western sandhills and southern piedmont covering the following counties:

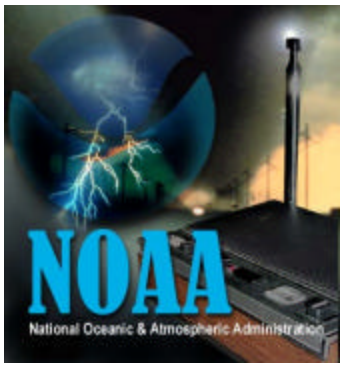
In NC: Anson, Hoke, Montgomery-Moore, Randolph, Richmond, Scotland, Stanly.
In SC: Chesterfield and Marlboro.

The Ellerbe NWR station is the result of a cooperative effort between Richmond County and the National Weather Service. Richmond County Emergency Management, under the direction of Frank McKay, secured a grant through the USDA funding the new weather radio station. The transmitter was installed by the National Weather Service and began broadcasting in early September, just in time for Hurricanes Ivan and Jeanne.

NWR is a nationwide network of radio stations broadcasting continuous weather information directly from nearby National Weather Service offices. NWR broadcasts National Weather Service warnings, watches, forecasts and other hazard information 24 hours a day. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "all hazards" radio network, making it your single source for comprehensive weather and emergency information.

NWR requires a special radio receiver or scanner capable of picking up the signal. NWR devices can be purchased at many electronic stores as well as online and range from $20 to $80 in price. The ability of NWR to alert you at home at any time of day for a variety of life threatening situations makes a NWR device worth owning.

See the back page of this newsletter for more details on the regional NOAA weather radio network.



Tropical cyclones spawn deadly twisters

The 2004 tropical weather season was notable in central North Carolina not only because of the large number of tropical cyclones to affect the area, but also because of the number of tornadoes that were produced by the cyclones. In August and September, twenty tornadoes were confirmed in central North Carolina. All of these tornadoes were associated with the remnants of tropical cyclones that moved across the state. Bonnie, Frances, Gaston, Ivan, and Jeanne all spawned tornadoes, some of which produced significant damage.

On August 12, an F1 tornado with winds up to 100 mph developed near Spout Springs in southwest Harnett County, and produced a path of damage 3 miles long. The tornado first touched down just northeast of McDuffie Road, south of Spout Springs. The tornado moved across the Heritage Park subdivision and the Carolina Lakes Golf Course. Three mobile homes were blown off their foundations and were destroyed. An additional two dozen homes sustained minor damage to siding, windows, and shingles. The Spout Springs Presbyterian Church was also partially destroyed. Four people were reported injured, three of which occurred in one of the mobile homes that was destroyed.

Outer bands from the remnants of Hurricane Ivan spawned multiple tornadoes across the Piedmont during the late morning and afternoon hours of September 17. The worst tornado damage occurred in northwest Guilford County around Stokesdale where a tornado touched down and tracked north for at least 7 miles. The average tornado intensity was F1 with maximum winds around 100 mph. Roofs and doors were blown off garages and numerous trees were snapped or uprooted. Many homes sustained damage to roofs from the winds and from falling trees. At one home, half the roof was blown completely off. Just across the county line a double wide trailer was destroyed in Rockingham County as the tornado continued north. No injuries or fatalities occurred in Guilford County with this tornado. Many people reported hearing the tornado warnings and took cover as the tornado hit.

In Moore County, an F1 tornado occurred with the remnants of Hurricane Jeanne on September 27. The tornado began on the south side of Southern Pines, blowing down some pine trees. The tornado continued on a northerly direction, blowing down trees onto homes and causing partial roof and wall failure at a small shopping center. The tornado briefly lifted before touching down again near the intersection of U.S. 1 and Morganton Road at Memorial Park. The tornado continued through a residential neighborhood where partial roof damage occurred with several large trees downed. The tornado crossed Midland Road and did minor property damage and extensive tree damage to the Midland Country Club. No injuries were reported in Moore County.

Tornadoes associated with tropical cyclones most often form in rain bands that are located ahead and to the right of the cyclone's track. This is because the southeast winds in the right-front quadrant of the cyclone result a turning of the winds in the lower layers of the atmosphere. This turning of the winds with height, called wind shear, is an essential ingredient in the formation of tornadoes. When tropical cyclones move out of the Gulf of Mexico and track near the Appalachian Mountains, this places central North Carolina in the right-front quadrant of the cyclone. So while these Gulf storms may not produce the widespread damaging winds that Atlantic storms do, they are more likely to produce tornadoes in our area.

-By Doug Schneider

A mobile home was blown off its foundation and destroyed by the Spout Springs tornado.

Colder weather increases fire risk

According to the National Fire Protection Association (NFPA), a house fire is reported to a fire department in the United States every 1-1/2 minutes, and someone dies in a house fire every 2-1/2 hours. NFPA also reports nearly two of every three home heating fires in the U.S. are attributed to space heating equipment, including portable electric heaters, kerosene heaters, wood stoves, fireplaces with inserts, and room gas heaters.

Common causes of space heating home fires are: lack of regular cleaning of chimneys and connectors; placing space heaters too close to combustibles; and fueling errors involving liquid or gas fueled heating equipment.

The Red Cross recommends taking the following preventive measures to help minimize the chance and effects of fire:
- Be careful with candles. Colder temperatures usually result in more burning of candles during the winter season than any other time of year. Winter storms and power outages further increases the use of candles in the home. Keep candles away from combustible materials. Never leave children unattended in a room with lit candles. Keep candles, matches and lighters out of the reach of children.
- Inspect fireplaces and wood stoves. Have your chimney connections and flues inspected by a professional and cleaned if necessary prior to the start of every heating season. Use a sturdy screen or door in front of your fireplace when burning fires. Burn only wood-never burn paper, including discarded gift wrap, or pine boughs. Do not hang holiday decorations from or on your fireplace if you plan to use it as a heat source.
- Check smoke detectors. Make sure detectors are working properly and that new batteries are installed.
- Be aware of overuse of electrical outlets. Don't overload your electrical outlets and be careful of extension cords that present hazardous walkways. The holiday season typically means increase usage for decorative lighting along with the use of electric heaters which cab quickly result in overloading of an outlet.
- Have one or more working fire extinguishers in your home. Most fire departments will provide training on how to use fire extinguishers.

Many people fall victim to fires in their homes during the winter. This fact means that everyone should have a fire extinguisher, test fire detectors in their home and replace any broken detectors and dead batteries.

-By Jeff Orrock

Think you know the "right" way to measure snow and ice?

With winter weather season fast approaching, it is time to discuss a few specifics about the proper techniques for measuring snow and freezing rain.

Your snowfall reports should consist of two numbers: the amount of new snow since your last observation (or since the snow began falling) in inches and tenths, and the total depth of snow on the ground in whole inches. All you need to make accurate snow measurements is a ruler or yard stick and a square piece of flat, white-colored plywood, called a snow board. The snowboard should be white so it does not absorb solar radiation, heat up, and melt the snow as it falls. Place your snowboard in a flat, open, grassy area where snow falls and accumulates as uniformly as possible. Such a location should be away from trees, buildings, blacktop driveways, sidewalks, etc., where the ground may be blocked by these objects, or where excessive snow drifting or snow melt might occur. It will be helpful to place a flag or a stake at the corner of your snow board, so it can be easily located. When making an observation, simply place your measuring stick into the snow above the board, and record the amount that has fallen since your last observation. If a snowboard is not available, a wooden deck surface is a good substitute for a snowboard, provided the deck is not beneath a canopy of trees. After each observation, your snowboard or part of your deck surface, whichever you choose, should be cleaned of snow. The snowboard should then be repositioned on top of the existing snow surface. Push the board into the snow just far enough that the top of the board is nearly level or just above the top of the old snow.

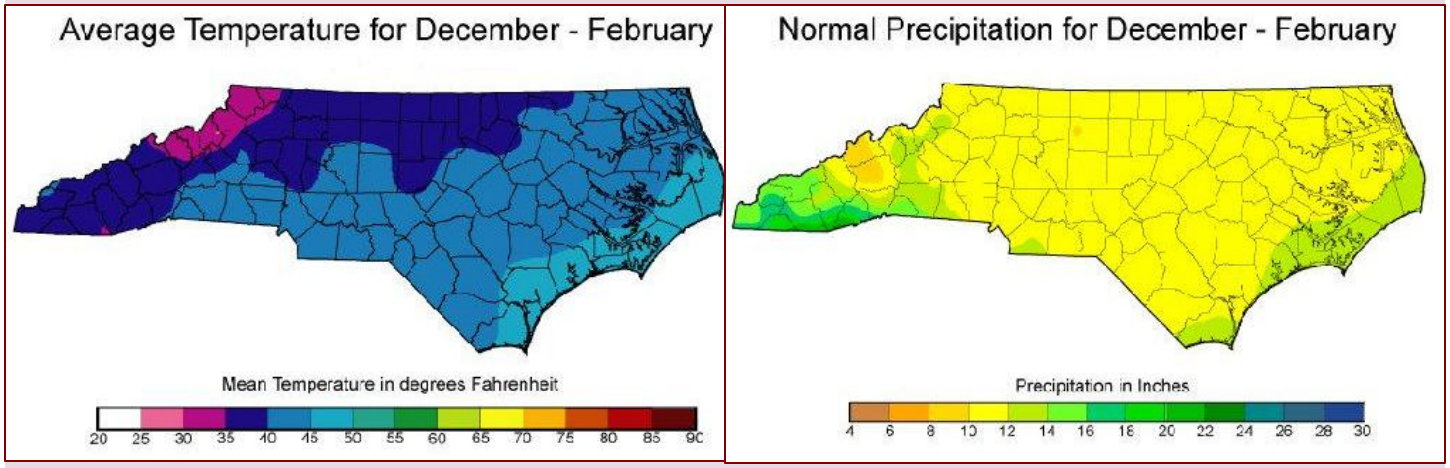
After making a new snowfall measurement, measure the total snow depth of both old and new snow. To measure total snow depth, simply measure the depth of the snow at several locations (typically five to ten different locations), and then take the average of your measurements. Since snow tends to compact with time, especially as new snow continues to fall, your previous total snow depth plus your new snowfall will be probably be greater than your most recent total snow depth. When choosing locations for total snow depth measurements, follow the guidelines outlined above for placement of your snowboard (flat areas away from trees, buildings, driveways, etc). Sleet measurements are made the same way you measure snow.

Before the proper techniques for measuring freezing rain (glaze) can be discussed, it is necessary to review and introduce a couple of terms that describe freezing rain accumulation, or accrual. These terms will be used in our text forecasts this winter weather season. "Accretion", defined as the process of growth or enlargement by a gradual buildup, best describes the process of freezing rain accumulation or accrual. Ice accretion is determined by measuring the vertical depth, perpendicular to the surface, of ice on a horizontal plane. Although accretion describes the process in a more realistic sense and is more scientifically correct, the word "coating", defined as the result of being covered or spread by an enclosing or shell like layer, may be easier to visualize, and therefore will be introduced into our text forecasts this season. Freezing rain accretion of one quarter inch in vertical depth on trees and power lines, for example, would result in a coating of one quarter inch of ice from the edge of the tree branch or power line outward to the edge of the ice, all the way around. A one half inch diameter power line coated with one quarter inch of ice would have a total diameter of one inch (1/2 + 1/4 on top + 1/4 on bottom = 1). You might see the words "accretion" and "coating" used in our text forecasts in the following ways: "Periods of freezing rain with ice accretion of one quarter of an inch", or "Accumulation of freezing rain on trees and power lines will result in a one quarter inch thick coating of ice...".

An aluminum strip should be used for measuring freezing rain accretion. Elevate the end aluminum strip from which you will be measuring. Then simply use your measuring stick to measure the vertical depth of ice accretion on the surface of the aluminum strip. If a metal strip is not available, other common metal surfaces can be used. Side view car mirrors make good substitutes for aluminum strips. Metal mailboxes, metal fences, and metal railings can be used as well. Measure the vertical depth of accretion atop whichever horizontal surface(s) you use. Exposed tree branches will suffice, but remember to measure the ice accretion, or vertical depth of the ice from the edge of the branch outward (see image below). If one side of the branch has a greater thickness of ice than another side, simply take an average. Once you have taken measurements from five or so different surfaces, take an average of all of your measurements, and report it in tenths of an inch.

-By Mike Strickler

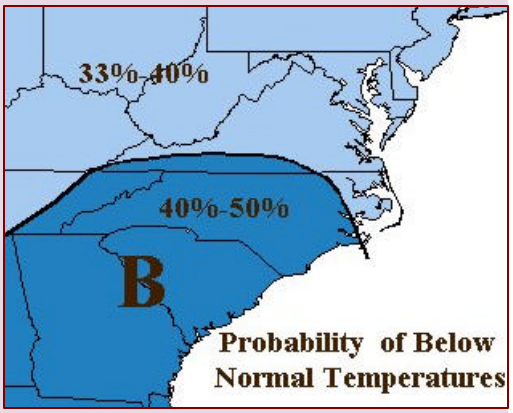
Climate Watch: A look at the winter ahead



Current observations indicate that weak El Nino conditions are present over the equatorial Pacific Ocean. Climate and statistical models are in strong agreement that at least weak El Nino conditions will continue through the first few months of 2005, with the possibility for conditions to strengthen to moderate El Nino. Historically, when El Nino conditions are as they are now, there is a strong influence over the southeastern United States during the winter season. Typically, temperatures over the Southeast are cooler than normal. However, there is much lower confidence in the precipitation pattern. As a result, the winter outlook calls for an increased likelihood for below normal temperatures over North Carolina with equal chances of below-above-normal precipitation.

In general, North Carolinians should experience large temperature swings throughout the winter. Cold air surges will follow cold frontal passages, followed by several days of modifying temperatures before the next cold front moves through the state. Average winter snowfall over the state ranges from about inch per year on the outer banks and along the lower coast to about 10 inches in the northern Piedmont and 16 inches in the southern Mountains. Some of the higher mountain peaks and upper slopes receive an average of nearly 50 inches a year.

-By Brandon Locklear



What Winter Weather Problem? (continued)

(Continued from page 1)

ice. North Carolina sits at 35°N latitude and is the battleground between cold air from the north and warm moist air from the south. The timing of the cold air collisions with moisture streaming in from the Gulf of Mexico and Atlantic Ocean makes a world of difference, many times dictating the type of precipitation you see falling. Geography also plays a large role in our weather with the highest Appalachian Mountains to the west and the warm waters of the Gulf Stream just off the coast. Cold air streaming in from the north and northeast is blocked by the mountains, while a wind flow off the ocean brings in moisture picked up by the Gulf Stream.

In order to help everyone best prepare, the National Weather Service in Raleigh works to predict the most dominant type of precipitation and accumulation which will impact the area. Many times you will hear a forecast of "3 to 5 inches of snow mixing with some sleet and freezing rain". In such a forecast, the major impact is expected to be from snow, while the forecast amount of ice would be limited to barely a glaze. Many different weather patterns, ranging from one simple cold high pressure system moving south colliding with one warm moist area of low pressure moving north, to very complex systems consisting of multiple low pressure systems interacting with the Gulf Stream riding over cold air from the north, work together to create a variety of winter weather scenarios.

The National Weather Service is Raleigh works in collaboration with North Carolina State University, utilizing the latest in technology and research. Many forecast techniques used for winter weather across the mid-Atlantic have been developed here in Raleigh. One of this year's new technological assets includes a new local model which will be tailored for our local weather problems.

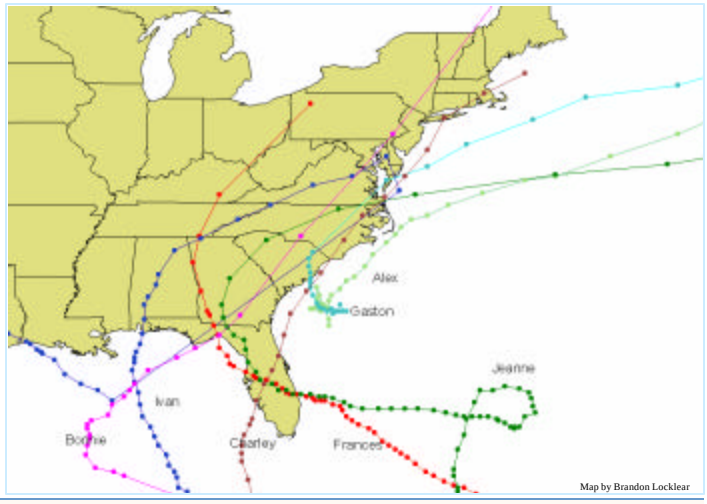
It is safe to say a variety of winter weather can be expected this season—this much is predictable. By incorporating science with technology and local knowledge we hope to stay ahead of the weather.

-by Jeff Orrock, with Kermit Keeter

Tropical weather summary for 2004

The 2004 Tropical Season in the Atlantic basin began slowly with no named storms in June or July. That dramatically changed in August and September, when a record 7 named tropical systems either directly or indirectly impacted North Carolina. Four of the storms affected the state in August (Alex, Bonnie, Charley, and Gaston), with three more to follow in September (Frances, Ivan, Jeanne). Even with this record number of named storms to affect the state, none of them made a direct hit along the North Carolina coast. Hurricane Alex was a near miss, brushing by the southern part of the Outer Banks in early August, producing strong wind gusts over 100 mph at Ocracoke. The remnants of the six other tropical systems to affect the state brought heavy rain and isolated tornadoes. Heavy rain and the resultant flooding became the major issue, especially over the western part of the state. Shown to the right is a map of the tropical systems that affected North Carolina this year. Summaries of all tropical systems that affected the state in 2004 can be found at http://www.erh.noaa.gov/rah/events/.

-By Phil Badgett and Brandon Locklear



Winter weather awareness week (continued)

(Continued from page 1)

Snow is also no stranger to the area. The snow storm of January 2000 is likely still a vivid memory in the minds of most Triangle residents. During this storm, 18 to 24 inches of snow fell in less than 24 hours, resulting in one of the snowiest winters on record. Some of North Carolina's most dangerous and costly winter storms such as these come as a result of nor'easters. Nor'easters, also known sometimes as coastal bombs, are areas of low pressure that form just off the North Carolina coast during the winter and early spring. These systems tend to intensify rapidly within a period of a few hours and can produce winds up to hurricane force and very heavy snow. In addition, they are very hazardous to marine interests, as winds and seas typically intensify rapidly as the storm strengthens and the low pressure deepens. The Outer Banks of North Carolina can incur substantial property loss, flooding, and beach erosion from nor'easters similar to the March 1993 "Superstorm", when peak wind gusts along the Outer Banks reached speeds of near 100 mph.

Winter storms are deceptive killers because most deaths are indirectly related to the storm. People can die in traffic accidents, suffer heart attacks while shoveling snow, get struck by falling trees, come into contact with downed power lines, or succumb to carbon monoxide poisoning while using improper heat sources indoors. There are several safety rules to follow this winter, including preparing for winter weather before it strikes. If snow and ice are forecast, make sure you have enough food, water, and necessary medicine at home to last several days. This will prevent a shortage of supplies in case the storm lasts several days, and will help you avoid having to venture out into hazardous conditions. Make sure there is enough fuel for alternative heat sources such as fireplaces, wood stoves, and space heaters, and always make sure that the proper fuel is used in space heaters.

Never use charcoal or gas grills indoors as a source of heat as carbon monoxide build-ups can become deadly. Ensure that your car has plenty of gas before the storm. If you must travel, carry a winter survival kit with you. We must not forget our furry friends: make sure that your pets have plenty of food, water, and shelter as well.

In order to protect life and property, the National Weather Service issues Winter Storm Advisories, Watches, and Warnings. Winter Weather Advisories are issued if a light accumulation of freezing rain or sleet is forecast, or if snow accumulations of 1 to 3 inches are expected. If a quarter of an inch of freezing rain, a half-inch of sleet and/or 4 or more inches of snow is expected, Winter Storm Watches and Warnings are issued. In order to provide the public with as much planning time as possible, Winter Storm Watches can be issued as much as 48 hours in advance.

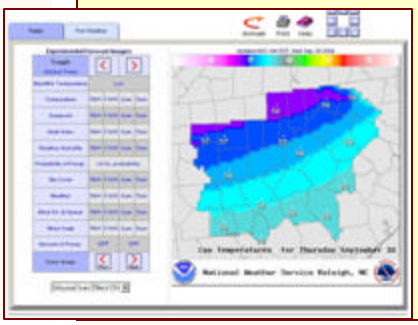
Keep up with winter forecasts, warnings and advisories by visiting the Raleigh NWS online at http://www.nws.noaa.gov/er/rah. To learn about snowfall history and climatology for your area and the entire state, visit the National Climatic Data Center at http://lwf.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html.

-By Jeff Orrock and Trisha Palmer

When a picture is worth a thousand words...

For those who prefer to see an image of their forecast rather than read the words, the National Weather Service in Raleigh has begun to produce detailed, experimental graphical forecasts for all of central North Carolina. Included in these forecasts are high and low temperatures and probability of precipitation out to 7 days, as well as forecasts of sky cover, temperature, relative humidity, weather, and wind, every 3 hours out to 3 days. Products such as these are intended to add to the value of our text forecasts and improve our forecast services by providing important, comprehensive information to emergency managers and other decision makers.

The forecaster creates the images on computer workstations using a utility called the Graphical Forecast Editor, or GFE. After a thorough analysis of various meteorological parameters, satellite imagery, and computer models, graphical forecasts for temperature, wind, sky cover, precipitation, etc., are created and manipulated by the meteorologist in GFE. After all forecast elements are produced, another set of software code helps to generate a set of traditional text and tabular forecasts. The entire package—including the text, tabular, and graphical forecasts—is then sent into cyberspace for display on our web page.



Forecast images can be found at www.erh.noaa.gov/rah/gfe/gridded.html.

-By Gail Hartfield

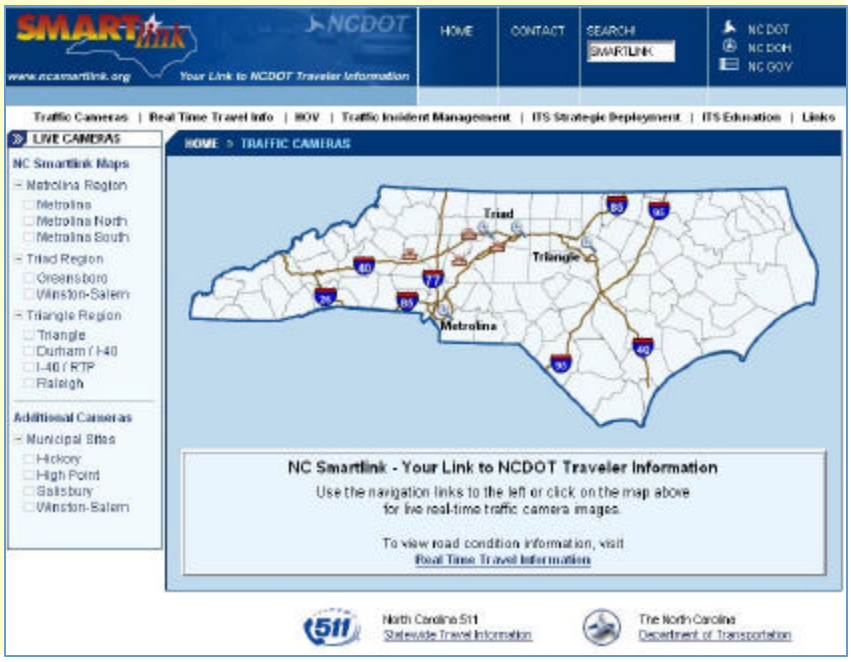
Safe driving tips (continued)

(Continued from page 1)

- If your vehicle starts to slide, do NOT hit the brakes, as they could lock up. Take your foot off the accelerator, and turn gradually in the direction of the skid.
- Be deliberate with your turns and stops. Do not slam on your brakes or make sudden drastic turns. And remember, if you have antilock brakes, you should apply constant, firm pressure to the brakes. Do not "pump" antilock brakes.
- Keep three to five car lengths away from other vehicles when roads are slippery. This will give you sufficient space to stop to avoid an accident, and will provide you with an "out" to get away from any other vehicles that are sliding or from reckless drivers. If another driver is tailgating you, allow him/her to pass you, if it is safe for you to do so.
- Be aware that bridges and overpasses are the first to freeze, and may be very icy even when other road surfaces are not. Use extra caution when driving on bridges and overpasses, especially when temperatures are near or below the freezing mark.
- If you become stuck in your car:
  - Turn on your flashing hazard lights.
  - Use a phone to call for help, and stay in your vehicle. Hypothermia and frostbite can develop suddenly during very cold weather.
  - Occasionally turn on the engine to keep warm.
  - Prevent carbon monoxide poisoning by making sure the exhaust pipe is clear and by cracking a window.
  - Move around to keep up good circulation.
- Don't get overconfident if you have a 4x4 vehicle. Remember that your four-wheeled drive vehicle may provide improved traction, but will not help you stop any faster.

For real time road conditions in North Carolina, check the Department of Transportation's Travel Information Management System website at apps.dot.state.nc.us/tims/, or call **511** from within North Carolina.

-by Gail Hartfield



Skywarn News:

2004 SKYWARN Recognition Day, a new leader, and our thanks...

SKYWARN Recognition Day for 2004 will occur on Saturday, December 4th. The Raleigh NWS station WX4NC will be on the air from 11am to 5pm. Several AEC and local SKYWARN volunteers will be communicating on HF, 2 meters, and IRLP. WX4NC will also be accepting QSL cards. We are all looking forward to the event and invite everyone interested to tune in.

The Raleigh NWS would also like to give thanks to John Hamilton, NC4JH, for picking up the flag as the new Triad SKYWARN EC. John takes over the position from Bill Boyes, who served SKYWARN and the NWS exceptionally for many years. John is already very active partnering with Carolina Fire Page and developing better communications systems.

For this winter season we hope to again call on SKYWARN. Last winter, many HAMs and SKYWARN Spotters in the Triad, Triangle, Sandhills, and Coastal Plain provided one to 3 hourly reports of temperature, type of precipitation, and accumulation during winter storms. These weather reports during winter weather allow forecasters to accurately track the progression of cold air and precipitation type across the area. Everyone at the Raleigh NWS office is grateful for this type of information in real time. Your reports are put into products and sent out to the world for use by everyone.

-By Jeff Orrock

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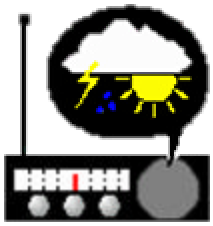
Mailing Address Line 3
Mailing Address Line 4
Mailing Address Line 5

"**Changing Skies**" is a triannual publication of the National Weather Service, Raleigh NC. For information or questions, contact Warning Coordination Meteorologist Jeff Orrock (jeff.orrock@noaa.gov)
Issue Editor: Gail Hartfield (gail.hartfield@noaa.gov)

NOAA Weather Radio: The Voice of the National Weather Service



NOAA Weather Radio provides a continuous broadcast of the latest weather information for your local area from the National Weather Service. NOAA Weather Radio is an "all hazards" radio network, working in conjunction with the Federal Communication Commission's Emergency Alert System. In addition to weather related watches and warnings, the Weather Radio system can provide information on all types of hazards, including Civil and National Emergency Messages.

North Carolina is served by over 27 NOAA Weather Radio transmitters which are located within North Carolina as well as in 3 neighboring states. These transmitters provide broadcasts to all 100 counties in North Carolina.

NOAA Weather Radio Stations Serving Central NC

Station	Location	Frequency
WWF 60	Buck Mountain	162.500 MHz
WXL 58	Chapel Hill	162.550 MHz
WXL 50	Fayetteville	162.475 MHz
KXI 72	Garner	162.450 MHz
WNG 586	Henderson	162.500 MHz
WXL 59	Tarboro	162.475 MHz
WXL 42	Winston-Salem	162.400 MHz
WNG 597	Ellerbe	162.400 MHz

For an interactive map of NWR transmitters across North Carolina, go to:

http://www.erh.noaa.gov/rah/ncnwr/